

Status of the Claims

1. This action is in response to the applicant's amendment filed on September 6, 2011. Claims 9-16 are pending and examined below. Claim 9 has been amended.

Response to Arguments

2. Applicant's arguments with respect to claim 9 have been considered but are moot in view of the new ground(s) of rejection.
3. Applicant's arguments with respect to claims 11-15 have been fully considered but they are not persuasive.

In response to the applicant's argument to claim 11, the examiner's interpretation on "orientation" under the broadest reasonable interpretation is construed as "position" of an object.

In response the applicant's argument to claim 12, the citations from Waters read on the claimed language.

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007). In this case, Strumolo teaches improving driving safety (i.e. protection from a collision, see ¶ 44).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waters, EP 1 030 188 A1 in view of Hampapur et al., US 2005/0012817 A1.

As to claim 9, Waters teaches a device for classifying at least one object in a surrounding field of a vehicle, comprising (¶ 10, 20-21):

- an environmental sensor system (¶ 10); and
- a classifier that classifies the at least one object based on a three-dimensional shape of the at least one object and dimensions of the object, the environmental sensor system ascertaining the shape and the dimensions (¶ 20-21; e.g. *analyze 240*).

Waters does not specifically teach classifies the at least one object into one of plurality of classes including object classes and a reject class, wherein the classifier performs temporal filtering in classifying the at least one object by taking into consideration a previous classification of the at least one object, and wherein each object class has assigned properties which describe at least one of characteristic features of the class and differences from other classes, the properties of the object classes being stored in a model database, and wherein the at least one object is classified as belonging to the reject class if the at least one object does not correspond

to any of the properties of the object classes stored in the model database. However, this matter is taught by Hampapur as each detected object is classified into one of the plurality of classes according to object classification system, and the properties of the object classes being stored in a database (¶ 39-40). It would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the object in Waters' teaching to be classified into one of the plurality of the classes as taught by Hampapur for better categorized each detected object.

As to claim 10, Waters teaches the classifier is configured to take into account, during the classification, a velocity of the at least one object according to at least one of magnitude and a direction (¶ 20).

As to claim 11, Waters teaches the classifier is configured to take into account, during the classification, an orientation of the at least one object (¶ 20).

As to claim 12, Waters teaches the classifier is configured to check validity of the classification using data from a database (¶ 20-21, 26-27).

As to claim 16, Waters teaches the environmental sensor system includes at least one of a stereoscopic camera, a monoscopic camera having a stereo motion sensor, a LIDAR sensor, and a scanning radar sensor (¶ 10, 20).

6. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waters in view of Hampapur, and in further view of Strumolo, US 2003/0114964 A1.

As to claim 13, Waters in view of Hampapur does not specifically teach the device is coupled to at least one vehicle system in such a manner that the device controls the at least one vehicle system as a function of the classification. However,

Strumolo teaches this matter (¶ 44). It would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the device in the teaching of Waters in view of Hampapur to be coupled to a vehicle system as taught by Strumolo for improving driving safety.

As to claim 14, Waters in view of Hampapur and Strumolo further teaches wherein the vehicle system is a protection system (Strumolo: ¶ 44; see claim 13 above for rationale supporting obviousness, motivation and reason to combine).

As to claim 15, Waters in view of Hampapur and Strumolo teaches the vehicle system is a driver-assistance system (Strumolo: ¶ 44; see claim 13 above for rationale supporting obviousness, motivation and reason to combine).

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Inquire

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARY CHEUNG whose telephone number is (571)272-6705. The examiner can normally be reached on Monday – Thursday from 10:00 AM to 7:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Trammell, can be reached on (571) 272-6712.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

The fax phone numbers for the organization where this application or proceedings is assigned are as follows:

(571) 273-8300 (Official Communications; including After Final Communications labeled “BOX AF”)
(571) 273-6705 (Draft Communications)

/Mary Cheung/
Primary Examiner, Art Unit 3667
October 12, 2011